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ABSTRACT

This document contains four papers from a symposium on contextual learning issues. In "Creating Mosaics: The Interrelationships between Knowledge and Context" (Barbara J. Daley), nurses report using information from training programs to create a knowledge base for professional practice. "Analysis of Action Learning Experiences through Use of Critical Incident Reporting" (Robert L. Dilworth, Verna J. Willis) provides empirical support for the effectiveness of action learning for individuals and organizations. "Professional Learning on the Job: A Qualitative Study for One Profession" (Kitty H. E. Kwakman) studies the teaching profession to determine the antecedents and organizational conditions influencing teachers' learning on the job. "Using the Burke-Litwin Model as a Lens for Understanding the Implications of Action Reflection Learning(TM) as a Catalyst for Organizational Change" (ARL[TM] Inquiry) finds that Action Reflection Learning(TM) served as a catalyst for change and identifies important categories not explicitly referenced in the Burke-Litwin model. (KC)

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18 **Contextual Learning Issues**

Chair: Robert L. Dilworth, Virginia Commonwealth University

Special Report: Outcomes of the Learning in HRD-Action Learning (IFAL) Pre-conference
Robert L. Dilworth, Virginia Commonwealth University

Creating Mosaics: The Interrelationships Between Knowledge and Context
Barbara J. Daley, University of Wisconsin-Milwaukee

Analysis of Action Learning Experiences Through Use of Critical Incident Reporting
Robert L. Dilworth, Virginia Commonwealth University
Verna J. Willis, Georgia State University

Professional Learning on the Job: A Qualitative Study for One Profession
Kitty H. E. Kwakman, University of Nijmegen

Using the Burke-Litwin Model as a Lens for Understanding the Implications of Action Reflection Learning™ as a Catalyst for Organizational Change
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Creating Mosaics: The Interrelationships Between Knowledge and Context

Barbara J. Daley
University of Wisconsin - Milwaukee

This qualitative study analyzed the interrelationships between knowledge gained in training programs and the context in which professionals practice. Forty semi-structured, interviews were conducted with nurses from hospitals, nursing homes and home care agencies to determine their use of new knowledge. Findings indicate that information from training programs was used to construct a knowledge base. This process was affected by the structural, human resources, political and symbolic frames of the context of practice.

How do professionals develop their practice? What are the relationships between knowledge presented in training programs and the use of that knowledge at the work site? Questioning the effect, value, and impact of training and development programs is not new. The value of training and development programs and the application of the knowledge generated in these programs has been studied, questioned, and analyzed. Evaluation of training has traditionally consisted of studying if participants apply new information upon returning to their work site. These studies report mixed and often contradictory results. Evaluation studies traditionally remove the learner from the context in order to isolate and study how training and education is utilized. However, it is this very isolation that can lead to confusion in evaluation results. Through traditional survey research the component parts of the educational process have been examined, but a holistic look at the process and its interrelationships is missing.

The purpose of this presentation is to describe a research study that emanated from questions raised about the value of training and education programs. The intent of this study was to describe and analyze the interrelationships between knowledge presented in training programs and the context in which professionals work. The context, or work setting, in which professionals practice was believed to have a significant effect on how knowledge is constructed. Training programs cannot be effectively evaluated if they are removed from the context. To understand the impact of educational offerings, the factors in the context that have helped or hindered professionals in their attempts to integrate this knowledge within practice need to be analyzed.

Theoretical Framework

The interrelationships of two major concepts, knowledge and context, were explored in this study. Knowledge, was viewed as the social construction of information that occurred through a process of meaningful learning and perspective transformation. The work of Ausubel (1978, 1986) and Mezirow (1990, 1991) was reviewed and synthesized to describe this view further. These authors were selected because their work frames a constructivist view of knowledge that provides insight into how professionals develop knowledge in clinical practice. Constructivist's believe that individuals learn by linking new information together with past experiences.

According to Ausubel (Ausubel, Novak, & Hanesian, 1978, 1986), the process of meaningful learning occurs as learners relate concepts descriptive of the new knowledge to previous knowledge within their cognitive structure. This integration of new and previous knowledge occurs through changes in the learners' conceptual structure. Concepts are developed into propositions and stored in a hierarchical fashion. This linking of concepts continues and changes as the learner adds more and more information to their knowledge base.

Mezirow (1990) expands this work by adding his definition of learning. "Learning may be defined as the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action" (p. 1). In this frame of reference, the learning process involves looking at past experiences, new experiences and reflecting on these for the purpose of making meaning of these events. New knowledge is added as seen through experiences and perceptions. Much of the way the learner acquires knowledge about the world is through childhood experiences.

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These experiences are related to culture and the socialization process experienced. Thus, much initial learning involves acquiring views of the world in an uncritical and non-reflective manner. Learners tend to accept things the way they are because exposure to diverse groups and activities is often limited. Mezirow (1991) believes that to make meaning the learner must make an interpretation. The key component of adult learning in Mezirow's (1991) terms is the ability to reflect on past experiences and assumptions, thus determining if these experiences and assumptions are still valid for the learner's current situation.

For the purpose of this study, context refers to the place where nurses provide care to clients. The context of practice includes the employer, the employing organization, patients, and the community in which the organization resides. The term *context* rather than *organization* was chosen as the focus of this study because there may be many different contexts within one organization. To date, little research has been done on the relationships between the context and the effectiveness of training programs and continuing education.

Cervero (1985) included the identification of the social system (context) as a variable with impact on the outcomes of continuing education programs. "A social system is defined as a collectivity of units which are functionally differentiated and engaged in joint problem solving with respect to a common goal" (Rogers, 1971, p. 28). "This may be the most powerful yet overlooked variable in analyzing the effectiveness of continuing professional education" (Cervero, 1985, p. 87). Warmuth (1987) studied evaluation of continuing education and found that nurses identified the work environment as being three times more likely to be a discourager of using continuing education than an encourager. Kiener and Hentschel (1989) in an exploratory study found that nurses identified lack of administrative support as 15% of the hindrance factor when attempting to apply new knowledge to the work environment.

Bolman and Deal's (1991) four organizational frames were selected as a framework for examining the context of professional practice. The four frames include the structural, human resources, political, and symbolic frame. Bolman and Deal (1991) developed these four frames to provide different lens with which to view organizations.

The structural frame draws on concepts from sociology and emphasizes formal roles, defined relationships, and structures that fit the organizational environment and technology. This frame includes organizational issues such as a division of labor, rules, policies, and procedures (Bolman & Deal, 1991).

The human resource frame originates from organizational social psychologists. Within this view, it is believed that organizations have individuals with needs and feelings that must be taken into account so that individuals can learn, grow and change. (Bolman & Deal, 1991). This frame focuses more on the process of interactions versus the content of work.

The political frame is based on the discipline of political science and views conflict as part of organizational processes. Within this view, the organization is seen as groups competing for power and resources. The tools of this frame are bargaining, negotiation, coercion, and compromise. This frame seems to operate most often in organizations with scarcity of resources and strong political processes (Bolman & Deal, 1991).

The symbolic frame originates from the discipline of anthropology. It abandons rationality and sees organizations as tribes with cultures propelled by rituals, ceremonies, stories, heroes, and myths. Bolman and Deal (1991) believe that organizations with ambiguous goals, uncertain technologies, and varied stakeholder groups tend to develop the symbolic frame more fully as a way to deal with the ambiguity.

Research Questions

This study used an interpretivist framework to search out the relationships and meanings that knowledge and context have for each other. The following research questions were advanced to guide this inquiry: 1. What makes knowledge meaningful in the context of professional practice? 2. How is the creation of knowledge affected by the different frames (structural, political, human relations, symbolic) of the context in which professionals practice? and, 3. What are the interrelationships between knowledge, context and professional practice?

Methodology

Registered professional nurses served as the sample of professionals interviewed in this study. Forty semi-structured, tape-recorded interviews were conducted with nurses from hospitals, nursing homes and home care agencies. The interviews were conducted 9-12 months following participation in a training or continuing education program. Nurses were asked questions about their learning, their work environment, and their clinical practice. Three data analysis strategies were employed in this study. First, following each interview a concept map was created to represent the major themes and concepts discussed in the interview. Second, a computerized category system was created for coding the transcribed interview data. Third, a system of matrices was developed to analyze what all participants in the study said about the specific research questions posed. Dependability and confirmability of study results were assessed using a qualitative data analysis audit (Lincoln & Guba, 1985).

Results

Findings indicated that nurses use unique methods to make knowledge meaningful in the context of practice and that the context of practice has an impact on how this knowledge becomes meaningful.

Making Knowledge Meaningful in the Context of Clinical Nursing Practice
Multiple factors identified in this study indicate how knowledge is made meaningful in the context of practice (See Figure 1).

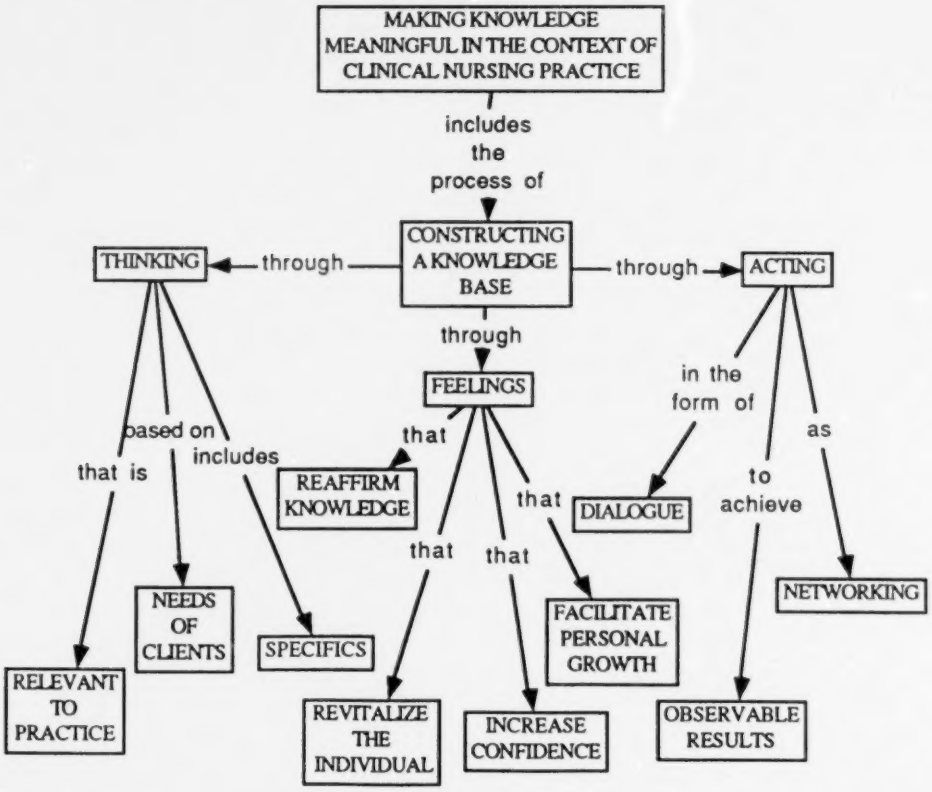

Figure 1: Making Knowledge Meaningful in the Context of Practice

A major finding of this research demonstrated that the information presented to nurses in continuing nursing education training (CNE) programs is not transferred directly to clinical practice. Rather, nurses move through a process of thinking about the information, identifying their feelings about the information and acting on the information in a variety of ways. What makes the knowledge meaningful is the fact that nurses go through this complex process rather than simply adopting and applying the information.

Nurses construct their own knowledge base by linking and assimilating new knowledge with their past and previous knowledge and experiences. They link concepts together in ways that have particular meaning to them. For example, when asked how continuing education effects practice one nurse responded as follows, *"Well, I guess I don't think of it like that. I mean I can't really say what helps me deal with what. I think of it more like creating mosaics. I mean, you have all these little pieces that come from all over and in and of themselves they don't mean much, but when you put them together you have a beautiful picture. Continuing education and client care are more like that for me. I take little pieces of what I learn from many places and put them together until I have my own picture."*

The metaphor of a mosaic depicts the idea of assimilation and integration of concepts. Another nurse reports, *"It [continuing education] makes the things that you've seen understandable from lots of different angles that I never recognized. Everybody puts their worlds together just from their experiences, and there's a whole lot of different experiences out there. Continuing education helped me see the different angles. I think I've become a better person and a much better nurse from that."*

Nurses reported that before knowledge presented in CNE programs becomes meaningful they must think about it, determine how the knowledge is relevant to their practice, and analyze how it meets the needs of their clients. Additionally, the knowledge must include enough specifics that they can draw on and link with their current practice.

An example of how knowledge is relevant to practice and plays a part in constructing the knowledge base comes from a nurse who described attending a CNE program on fetal monitoring. This nurse stated, *"Well, it was a very practical oriented workshop, because you go right back to the labor and delivery and you're working with fetal monitoring on a daily basis. You're able to interpret the results much more. For example, I had a woman who was having deceleration, and normally decelerations make you nervous, okay, but I had a better understanding of how to delineate between a stressful deceleration and a normal deceleration. And the baby also had some variability and accelerations, which in fetal monitoring indicates that the baby is okay. Some of the other nurses were getting upset, and I said 'Well, now . . ' and I went through what I learned like you can't have accelerations if you have a baby that's in distress. It ended up being true. The baby was fine."*

Another nurse described how CNE information was incorporated into a developing knowledge base. She described how the needs of her client in an emergency situation fostered her recall of information presented in a CNE program. This recall helped her provide care based on what she had learned. She described, *"We had a chest trauma where the person hit the steering wheel, where eventually he did end up with a cardiac tamponade. . . We watched for signs and symptoms of that. It was very obvious with some of the things they talked about [in the CNE program]. . . Like the heart sounds, the hypertension, the tachycardia. Another big one that I noticed was pulse pressure. These are things that are brought out and you say, "Oh, I remember. [The speaker] talked about that."*

Participants also reported that their feelings about the information influence the construction of their knowledge base. Nurses reported that CNE programs reaffirm their knowledge, revitalize their professional development, increase their confidence and facilitate personal growth. The following quote depicts the feelings nurses have in constructing their knowledge base. *"I wouldn't say there was a lot of new information in the program, but the program only reaffirmed what I think about dying. It reaffirms for people that it's important to do the right thing even though no one agrees with me."* Another study participant expanded this view by stating, *"Sometimes you just get such energy from people that are so enthusiastic themselves about what they do, and just so positive about the changes that are going on in nursing (very good things), and I just felt good. I think that was the best thing that I took from it was the enthusiasm that [the speaker] gave."*

Finally, nurses reported that to construct a knowledge base they must take some action on the information. The action is necessary so that the new concepts are linked with previous or existing information. Nurses took this action through discussion and dialogue, by networking at the CNE program and by trying out new things presented and watching the results. Nurses reported that observable client results encouraged the use of new knowledge. For example, the following nurse described how her staff had tried a bladder retraining program learned in a CNE program with a resident in long term care. This nurse reported that the intervention worked. She went on to say, *"I think just*

with the proof that the staff could actually see that there were some effective methods, certainly based on the individual resident, that worked. Now they're more willing and actually at times on new admissions implementing changes without a cue from any of the supervisory staff."

Impact of Context on the Formation and Use of Knowledge The findings of this study indicated that the context in which nurses practice had a great impact on their use of knowledge from CNE programs (See Figure 2).

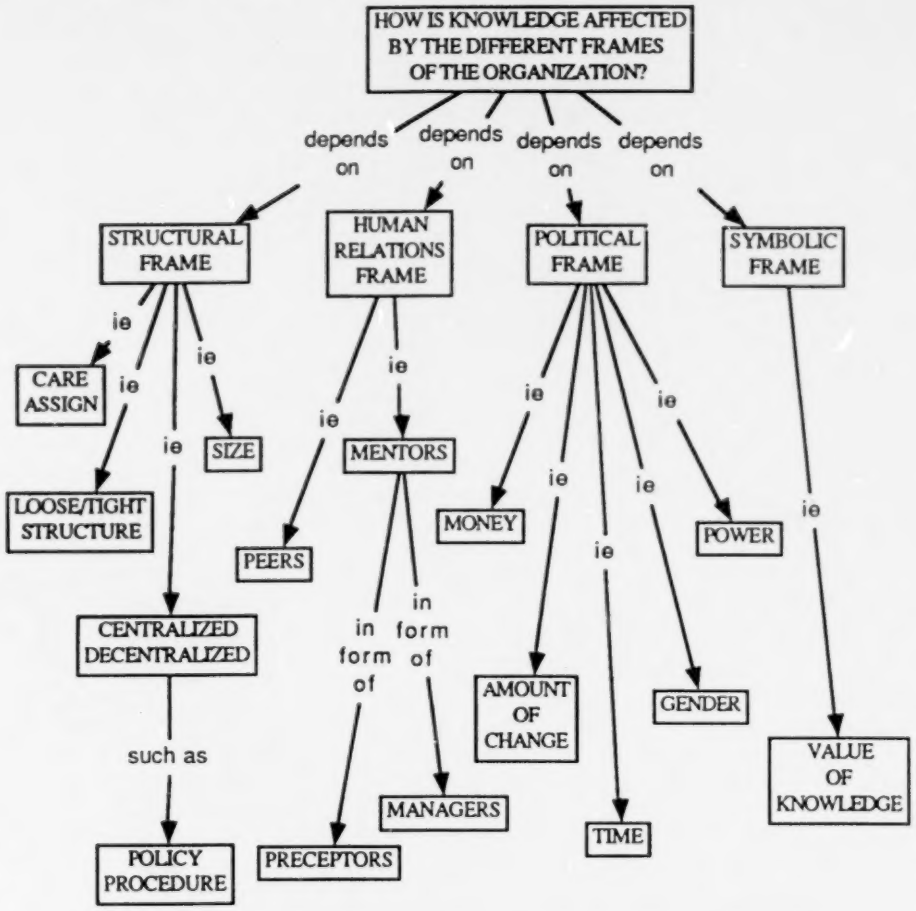

Figure 2: Organizational Impact on Nurses' Use of Knowledge

Overall, nurses reported that the more holistic the care assignment, the more loosely structured the organization, the more decentralized the context and the smaller the context, the greater the use of knowledge. The data were analyzed for the impact of the structural, human relations, political and symbolic frames.

Structural frame. Nurses identified that the structural frame of the organization was seen as a hurdle. It was identified as a hurdle in the sense that nurses were very aware of its existence, they knew the location, it may stand in the way of the identified goal, and yet, they knew precisely how to get around it. Nurses reported that the structural frame often provided a temporary block to their use of knowledge, but they could usually figure out how to manipulate the rules and not let this frame stand in the way of their client's needs. One nurse described how she attended a CNE program and learned a new type of bowel regime that was effective for gerontology clients. She explained how she took this information back to her agency. *"Well, right now we're [trying] a bowel regime. Not officially because we think the agency would come in and say, "Oh, well, we have to get this approved first." But basically*

we are doing PO [oral] meds and Metamucil, in consecutive days. So we're just doing it on three patients to try to change from doing suppositories and enemas all the time. After the CNE program where this was suggested we all got together and figured it out and wrote it down, formalized it and did it. We got the doctors to write the orders, . . . most of the patients are under one physician. . . . .We don't want to go public with it until we do the trial because probably the agency might think, Well, this has to be approved by this and that committee."

Another nurse described how she attended a CNE program on death and dying. In that program she learned how it is important at the end of a client's life to be able to assist that person in meeting their goals. She discussed how she implemented that learning despite the structural frame of the context in which she practiced. *"Well, [the hospital] is still pretty conservative. I'd like to tell them to lighten up a little bit. This young man who died in February we had a Harley Davidson motorcycle brought to his bedroom on his birthday because he loved motorcycles. We're pretty lucky in that [the unit] is located on a separate section of the hospital. [The unit] is on the ground floor and we have a separate entrance so you can sneak things like that by . . . this was a kid that you couldn't help falling in love with. I mean genuinely, wonderful young man. . . . we decided that he needed to have this Harley, and we actually let him get on it, and the man who loaned it, was taking him through the halls on it. Just because he needed it. We have been known to sneak pets in too. Sometimes you have to push the rules aside to do what the patient wants because this is the end of their life."*

Although the structural frame presented a hurdle for these nurses, it did not stop them from using their new knowledge. The loyalty of these nurse was to the client and meeting the client's needs so they overcame the hurdles of the structural frame.

Human relations frame. Nurses reported that the human relations frame was mostly positive and facilitated their use of knowledge within the context of their practice. Nurses indicated that peers and mentors were encouraging and willing to try out new things that they brought back from CNE programs. Nurses identified that mentors in the form of preceptors and nurse managers had the most influence in how they worked with the new knowledge. The more encouraging, open, and flexible these individuals were the greater the use of knowledge. The following quote was typical of nurses' comments when discussing this organizational frame. *"I think they're [nurse managers] very supportive. Any information that we get from continuing ed., they're more than willing to let you implement or try out. There are no barriers that way."* Nurses specifically described the role that nurse manages played in facilitating the use of new knowledge. As indicated in the following quote, nurses felt that nurse managers were helpful. *"If she's [nurse manager] supportive, then it's going to mean more to you and certainly encourage you to incorporate that knowledge into your practice. If the head nurse doesn't value it, then I think most people will say, well, I'll blow that one off."*

Political frame. The political frame of the organization had a significant impact on how nurses used new information in clinical practice. Money, power, change, gender, and time with clients (as a function of resource allocation) all affected how nurses constructed and integrated their knowledge base in practice. When asked about the politics of their organizations and how the politics affected their use of knowledge, nurses would respond that they tried to stay out of those issues. By staying out of the politics nurses limited their use of new information in practice. The following nurses comments are typical of nurses beliefs in this area. *"I guess the political issues always get in the way. When you feel disempowered you tend not to use it."* Another nurse expressed the frustration with the political frame of the context of her organization. *"Ideally, I'd love to take this information and say we're going to implement this system. It's going to be rough going at first but everyone's going to do it and once we get it up and going it really will be better. My hands are tied because I don't have the power to do it. I know that we need and I know that it can be better than it currently is, but I don't have the power to do it and it's frustrating to me."*

Often the political frame served as a screen or a filter to new knowledge even entering the context of practice. Nurses made judgments about how well the information would "fit" in their practice arena. Rather than deal with conflicts that can be created by some of the knowledge nurses posses, they tend to screen it out of their knowledge base.

Symbolic frame. The symbolic frame of health care organizations seems to arise from the issues identified in the political frame. The issues of gender, power, change, money and time all act as artifacts of the organizational culture. Nurses recognized that the political issues are imbedded in the organization as part of the culture and thus, a general assumption exists that change will be difficult. In a very real sense the political issues define the organizational culture.

As a result nurses tend to avoid political issues and not deal with them in either the political or symbolic frame. Nurses are successful at going around the structural issues because they tackle them

directly, but they tend to avoid the political issues. It is then these same political issues that significantly impeded the incorporation of new knowledge in the context of clinical practice.

Another assumption of the symbolic frame, identified in this study, was that specialist knowledge is more valued than general knowledge. Nurses demonstrated this view in a number of ways. Intensive care unit nurses discussed how their knowledge base is more valued than nurses on the floor and, thus, they are afforded opportunities for more independence and accountability. Home care nurses talked of how their knowledge is also valued because they are experts in an area of health care in which few other professionals work. Home care nurses described how being the revenue generators for the agency contributed greatly to their perceived value. Nursing home nurses describe their knowledge based as undervalued and devalued. This devaluation has reached the point where other professionals do not trust the information they provide about clients and look down on the knowledge they have of the elderly. Nurses reported that the value placed on their knowledge affected how willing they were to use new knowledge in practice.

Review of Findings

In reviewing these findings, it is evident that nurses who attended CNE programs used this new information to continually construct and reconstruct their knowledge base. The new information learned in CNE programs was added to a nurse's knowledge base through a complex process of thinking about the new information, acting on or trying out the new information and identifying their feelings about the information.

Finally, this complex process occurred in a particular context and the context shaped the developing knowledge base as well. The structural frame served as a temporary hurdle to the use of new knowledge. The human resources frame facilitated the use of new knowledge through positive interpersonal relationships. The political frame served as a screen to filter out new information. Finally, the assumptions imbedded in the symbolic frame contributed to nurses either feeling valued or devalued.

Implications for the Practice of Human Resource Development

This study has implications for human resource developers, continuing nursing educators, staff development trainers, managers and staff. The issues identified and reported here can be used assist professionals in making meaning of their educational experiences within an employment context.

This study indicated that the role of human resource developers and trainers is demonstrated to be much more than simply designing programs so that professionals can adopt the information in their clinical practice. The role of the human resource developers is facilitating a process of learning, reflection, growth and change. Training programs were demonstrated to serve as a linkage in the process of creating mosaics for professional practice. It is through these growth processes that professionals gain the confidence to act on information in clinical practice. The greatest impact of continuing education and training comes from facilitating the integration of multiple forms of knowledge. However, linking continuing education and personal growth is not always a comfortable position for educators. It is a much more complex view of the learning process and makes the human resource developers accountable for a great deal more than presenting information. The results of this study indicate that professionals must be able to build a knowledge base in practice by using information from a variety of sources. This implies that the educator then becomes a facilitator of the learning process rather than developer of specific program content.

This study also has implications for managers. It is essential for managers, especially managers in health care, to understand and be able to deal with the political frame of the context in which they practice. Managers also need to be able to assist staff in dealing with the political frame and help discourage staff from filtering out new knowledge for practice based on organizational politics. Managers themselves need training in political strategies that foster conflict resolution, negotiation and compromise.

Finally, this study demonstrates the immense learning that clinical practice provides. Human resource developers need to establish learning programs where staff recognize the learning embedded in their clinical practice and begin to "tell their stories". It is through discussion, dialogue and reflection on clinical cases that professionals will continue to construct knowledge bases that inform and transform their professional practice.

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Analysis of Action Learning Experiences Through Use of Critical Incident Reporting

Robert L. Dilworth
Virginia Commonwealth University

Verna J. Willis
Georgia State University

Action learning is gaining advocates. It is seen as a means of promoting both individual and organizational level learning, while simultaneously addressing recalcitrant problems. However, there has been little research related to the outcomes and value of action learning.. This study documents critical incident based reporting by the learners themselves during and after an international action learning intervention. Qualitative analytical techniques are used to gauge the nature and intensity of the experience, and the sense participants made of it.

There is growing interest in use of action learning as an HRD intervention in corporations as well as governmental organizations. It is also establishing a presence in U.S. universities. Virginia Commonwealth University (VCU), Georgia State University (GSU), and George Washington University (GW) are among those that have explicitly incorporated action learning in their graduate HRD and adult learning curricula. The University of Ballarat in Australia has organized its business school curriculum around action learning. Business School Nederland in Holland bases its MBA programs on principles of action learning. Educational institutions in Asia have also become interested in action learning and incorporated it into certain curricula (e.g., the Management Institute of Singapore).

A number of examples can be found in the United Kingdom. Prominently, the University of Salford in England established the Revans Centre for Action Learning and Research as a part of their Continuing Education Curricula in 1995. The action learning based program of study extends through the doctoral level, and although it is a new program, graduate student enrollments were expected to exceed 100 in the Spring of 1997. To aid its scholars, the Centre has acquired an extensive library that includes records from more than fifty years of the international action learning practice of Professor Reginald Revans, for whom the Centre is named. Accelerating enrollments and an accumulating body of action learning literature are notable evidence that action learning has both an active past and a promising future.

While action learning is now becoming programmatically visible in graduate schools, there is little, if any, systematic research being done to establish what works and why, or what may be the best modalities to apply. In practice, action learning approaches are becoming more widely used in corporations, governments and other organizations around the world, but results pertaining to their use tend to be undocumented. When there is documentation, it can orient on problems solved and dollars saved, without analytical attention to the individual learner, the group dynamics involved, or the learning effects on the organization. How were the participants changed as a result of the experience? What did they feel? What kind of learning process was involved? What impact did the learning experience have on corporate culture and operations?

Use of the term action learning can raise immediate questions. What is it? What distinguishes it from other approaches? Perhaps one of the problems with research related to action learning is in arriving at commonly understood terms of reference. Reg Revans of England, the principle pioneer of action learning, avoids direct definition. Others contend that one can truly comprehend action learning only by experiencing it. It is heavily process based. It flows out of adherence to a loosely constructed framework from which the group dynamics are allowed to unfold, with some degree of monitoring and intervention by a facilitator (referred to by some as a set advisor). Some of the key aspects of process design are: (a) individuals are assigned to an "action learning set," usually consisting of five to six members. No one is designated to lead the set and all members are considered equals; (b) while the set can be composed of members of a natural team, it may be ideal to have a mixed team (hierarchically and cross-organizationally) dealing with issues/problems that are unfamiliar to the participants. This discourages making assumptions about "expertise" and induces fresh thinking and questioning; (c) task

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accomplishment, although urgent, is balanced by the need to reflect critically and learn from the experience. In a sustained sense, learning becomes paramount. Individual learning streams directly into the crucibles of the learning organization, causing new insights to be stored, transformed, and become part of the strategic knowledge base of the enterprise; and (d) the problem(s) to be addressed by the action learning set must be real and unsolved and not without personal risk. A faced reality becomes the motivational engine for learning and problem solving.

Framework of the Study

VCU inaugurated a Summer Overseas Program in 1996 with the support of the Revans Centre at the University of Salford. Titled as an International Action Learning Seminar, it was designed from the start to provide both a valuable learning experience and to create a definitive research base. GSU joined forces with VCU for the purpose of collaborating on research related goals.

The program involved the mixing of cultures and universities. There were 31 student participants, 22 from the United States, five from Australia and four from Canada. British and U.S. faculty members served as mentors to student action learning sets (five). Students came from a variety of institutions and backgrounds. Students from GW, the University of Michigan, the University of Calgary (Canada), and the University of Ballarat (Australia) shared the experience with students from VCU and GSU. It was a very mature group of participants, most with extensive life experience. One of the students was the Senior Vice President for Human Resources at a major global corporation. Two students were Chief Executive Officers. A senior government official was also a group member. Many had experience as consultants to top management in companies.

In keeping with the thrust of action learning, the student action learning sets were assigned real problems of significant difficulty and complexity with which to deal. They did this over a two-week period. Only one of the students had ever been to the University of Salford previously. Of the 11 students from VCU, few knew each other well before the experience. Among the six GSU participants, prior course work taken together had created common bonds for some although they, too, had very limited action learning knowledge.

Most of the participants had never met before. In their sets, they were all on unfamiliar ground dealing with unfamiliar issues and surrounded by unfamiliar colleagues. Further, all of the preparatory work concerning action learning had been through documentation, telephone calls, videotapes, and audiotape. Once the students had concluded a two hour introductory session on site at the University of Salford, they immediately began the experiential learning process. There was no lead-in time for getting acquainted in the social sense.

To build a research base, data collection began before leaving for England. Background information cast in personal narrative form (as opposed to curriculum or employment vitae) had been obtained from each enrollee two months earlier and shared with all student participants around the world. Students provided a one-page personal profile, a statement of their personal expectations for the course, and an indication of prior experience and interest in action learning. Each submission included a photograph of the participant. Learning styles had been assessed well in advance (using the Honey-Mumford Learning Style Questionnaire) and then provided in summary form to each participant.

Breakdown of participants into action learning sets was done by the overall coordinator at VCU using multiple criteria: nationality, gender, learning style, age (it ranged from 23 to 73), background, prior knowledge of the problem area to be addressed, and relative familiarity with action learning. Sets were mixed to provide maximum diversity. For the most part, participants were positioned as far away from their natural expertise as possible. Students knew which set they would be in and the problem they would be addressing for over a month before departure. They reviewed a binder of materials arranged according to learning set and containing the background information on all their colleagues in the summer program. As a result of having such information, a number of students began collaborating via Internet/E-mail before they had ever met formally.

The single client, South Manchester University Hospitals NHS Trust, one of the largest Trusts in England, was undergoing major restructuring. It was dealing with daunting problems of work force morale, strategic planning, and organizational culture (two major hospitals with very different cultures were to be combined). The five problems selected by the client were synergistic in the sense of overall themes and dilemmas, but each was posed because it was a critical and specific responsibility of a hospital manager. One problem involved reconciling the demand for a three percent annual increase in business activity while preparing to downsize the organization by 20 percent in three years' time. Another centered on the need to show clinical areas the benefits of market planning. A third problem was deciding how to reconstruct a strategic planning process that had yielded neither a sense of ownership throughout the organization nor a clear picture of progress made toward reaching goals. The

other problems were intertwined with these. The five managers who "owned" the problems were assigned an action learning set to work with them. This required a leap of faith on the part of hospital personnel, because only a handful of the international participants had health service related background. One had engineered a major turnaround in running a large hospital. Two others had nursing backgrounds. One had human resources experience in a health services organization. These individuals were distributed throughout the sets, as were the few participants with previous action learning experience.

Theoretical Considerations and Research Questions

Still without benefit of sustained research over time, the theoretical bases for explaining action learning, when and why it works, and how it differs from other experiential or action-oriented HRD interventions are still forming. However, there are parallels that can be drawn with previous work in small group dynamics and action science (T-groups, Tavistock groups, team-building, leadership studies, etc.), from learning styles research, from cultural communication studies, and from numerous studies in organizational problem-solving. Because this article is focused on one particular event, the two-week experience in the 1996 Summer Overseas Program, it is largely exploratory in nature and is intended to generate a new line of inquiry that can later be linked, as appropriate, to existing research and theory. So little is known from disciplined inquiry about action learning and its effects that the questions guiding this study and influencing the selection of qualitative research strategies are necessarily broad and tentative.

Other questions and new insights are emerging as the research proceeds. Findings are preliminary , i.e., first fruits of what is planned to be a long-term investigation. The following questions should therefore be viewed as subject to alteration, refinement, or even replacement by more discriminating questions that emerge from the data as it is analyzed and reflected upon. Subsequent discoveries of layers of meaning in action learning and implications for HRD practice seem likely. Initially, there were ten major questions we wanted to explore, hoping to find recurring patterns from which tentative inferences could be made. These are:

1. What is the nature of the interpersonal dynamics that surfaced when action learning sets were operating?
2. How have participants perceived the experience?
3. When were people likely to be most fully engaged or least engaged?
4. When were participants puzzled or uncertain about themselves or about what was occurring?
5. What learning gaps did participants discover in themselves?
6. When did they feel most affirmed?
7. What constituted the most important learning moment or event, and why?
8. How did participants assess the quality of the interpersonal associations and interactions with the client?
9. What did the academicians learn from the experience?
10. How does what occurred inform the design of future action learning programs in general and of specific programs of this type?

Methods

The methods used to establish the research context and opportunity have been described above. The methods of analysis are conceptual and qualitative, drawing heavily on textual analysis techniques while at the same time relying on critical incident and learning style reports. No attempt is made to reach statistical generalizability, but rather to identify analytically generalizable findings from masses of data obtained during the course of real events and reflections (Yin, 1994). Those accustomed to working with verbal data will be quick to understand that techniques for data reduction are demanding, requiring constant comparison and constant reworking of the data according to the rules of qualitative inquiry, with the goal of maximum future usability.

In order to provide a research base amenable to such analysis, data collection was embedded in the learning experience from the beginning. All participants kept personal journals *daily*, to include what happened of special significance. Each was asked to reflect upon what was learned from that experience (or critical incident) and how lessons learned would be applied in the future. Students also submitted a 10-page reflective essay after the summer program was over. Much (but by no means all) of the content of essays was tied to a set of simple,

open-ended questions which primed students to consider what happened that made them feel engaged, puzzled, distanced, in need of additional information, more insightful or even transformed in their thinking, and so on. The connection of these thought-starter questions with the research questions is obvious. Even though students were encouraged to write anything they wanted to, certain categories of experience were predicted from the beginning to be especially meaningful and rich in interpretive value. In addition to the journal entries and the reflective essays about personal experience, the participants also wrote and submitted essays reflecting on the special properties of action learning and the problem solving process. How, they were asked, did action learning facilitate learning? They were specifically to include references to the most salient things learned about action learning as a process (positive and negative).

What the "priming questions" provided for was a common basis for comparison of responses within categories and across learning styles. We wanted to know whether there were patterns across all participants, or whether there were similarities or differences tentatively attributable to learning style, gender, national origin, or other potential variables. Were the reasons given for engagement or disengagement with the process similar or apparently idiosyncratic? Would the critical incidents reported in one learning set be compatible with incidents reported in other sets? The possibilities would clearly have to emerge from the data itself and from the strength of the statements made. In fact, during the analysis a category called "intensity" seemed to be needed to signal the depth of feelings that were expressed. Another pattern began to emerge also, which was subsequently coded as metaphorical, when participants reached for analogies and poetic phrasing to express what had plainly affected them above and beyond the intellectual processing level. How confident participants were that they could initiate and use action learning in the future also became an issue and an analytical category.

For nearly 60 program participant essays (two per student), because of time constraints, coding has been restricted to a macro level and has proceeded without the benefit of computer assisted, text unit sorting and manipulation. For subsequent and more refined analysis, the Sage Publications QSR NUD-IST data analysis software will be used. Essays from classes in action learning at GSU have already been coded, entered, and reported by category and may serve as both pilot and source of comparison for data from the Salford essays. Future sources of data may be textual analysis of participant self-reports in the archival action learning literature, as well as from future classes and organizational interventions. At this juncture, these studies do not pretend to address directly the impact of action learning on organizations as a whole. The research assumption is that if individuals engaged in action learning do not show evidence of having learned, then organizational learning that is presumed to occur through action learning projects is itself questionable. Further, these studies do not presume to address bottom-line impact of action learning problem solving. Since cost-avoidance or expanded profits can often be temporary if there are no fundamental changes in the organizations themselves, action learning as a personal and organizational transformation process may be legitimately considered an a priori target for investigation.

Preliminary Results and Conclusions

The participants bonded closely. There was a desire to maintain contact and this fueled follow-on Internet connections among students. Roughly 25 percent of the participants began organizing for a possible reunion in Charlotte, North Carolina in the Fall of 1996. Over half said that they were planning tentatively to participate in the pre-conference on action learning scheduled prior to the Academy of Human Resource Development Annual Conference in Atlanta, Georgia in March of 1997. Both the valuing of relationship-maintenance and a thirst for further knowledge development appear to have been stimulated by the shared action learning experience.

What are some of the specific early results? First, a common thread of student reactions centers on "freedom to learn." Secondly, there was a sense that much more had been learned in the action learning process than typically happens by way of more standardized, " regular" classroom work. These mature students considered the learning experience intensive, even stressful at times. This is an interesting result since the tempo was largely a product of decisions made by each action learning set and was not at all imposed by mentors or administrators. Several students said they had been favorably transformed by the experience. While participants used a common language (English) and had pleasant memories to relate, they also cited differences between cultures. As might be expected, some of the culture differences were perceived negatively. Learning styles tended to follow true to form. Activists more often than not dominated dialogue. Those requiring a high degree of structure expressed angst at the absence of structure (the action learning sets were in effect self-directed work teams with very limited facilitator/mentor interventions). Pragmatists could be seen assuming leadership roles in moving the agenda

forward. Results of re-administering the learning style questionnaire to several of the participants after the program showed some significant shifts in learning style pattern. For example, one student had become markedly more reflective.

Group dynamics were not always placid. Conflicts occurred from time to time and there were a few who found the program an unsettling experience. They were among those who had a desire for more structure and who did not feel comfortable navigating without a pre-set agenda. Despite this, the reflective essays submitted in such cases also revealed that significant learning had occurred. Structure-preferrers tended to rate their learning experience highly even though it caused them to operate out of their normal comfort zone.

During the program there was an unfortunate incidence and pattern of property theft from student dormitory rooms. This created considerable anxiety at mid-point in the program; however, it seems to have even more closely bonded the participants. The importance of being what Revans has called " comrades in adversity" in the midst of a problem solving process was brought home to them in an unexpected and highly personal way. Among other effects, it seemed to elevate their respect for one another. While the thefts were certainly a negative happening for organizers, the host institution, and participants alike, this did not have the power to dampen enthusiasm for the program or its outcomes.

Illustrative Excerpts from Student Essays. Participants wrote about self-discovery , life-changing insights, commitment to process, enhanced self-efficacy, and a hunger to learn. These were recurring themes. Many expressed deep satisfaction with the quality and usefulness of the work done with the clients, despite the tight time frame. As a sampling of comments reproduced here will show, learning progressed on many fronts. This variety underscores the need for deeper analysis and impact studies. For example, when a student says, "This program changed my life forever and I don't want it to go back," something profound seems to have been learned. But there is also a hint of concern that such learning could go away or not be repeatable with similar results in the future. Most essays were produced and submitted several weeks after the program concluded and participants had resumed their work and daily activities. On this basis, the comments can be trusted to describe feelings and thoughts that have been reflected upon, and cannot be dismissed as end-of-the course "emoting." Some who articulated the life-changing theme viewed daily journaling as a way to reconcile inner and outer aspects of themselves. Thinking about the experience as a whole prompted them to make comments like these:

> I was able to see myself in a different light than I'm used to. I was able to break down who I am, to see the ethics, values and beliefs I hold, and to really explore those for the first time. Some of what I saw bothered me deeply; other things I was quite happy about.
>
> I was and probably still am not a sociable person, but through meeting these people I learned that it was all right to be different and to accept others just the way they are.
>
> All in all, for me this course was one of, if not *the* single most intriguing and memorable experience that I have had--in life as well as my graduate program of study. It has broadened my perspectives and interests.
>
> The most special and important moment for me was when I realized that it was O.K. not to be an expert, and that I do not have to have all the answers. For years it bothered me as a personnel specialist that I was expected to go into an organization and solve the problem. How egotistical to think I had all the answers! Now I realize that a better solution is ... to provide methods and tools to allow its members to help themselves.
>
> I need to work on having more faith in my own thoughts and suggestions. I usually feel that my ideas aren't worth presenting...I have been surprised to find that people felt differently about them than I did.
>
> I learned a lot about myself in the two weeks... First and foremost I learned that having a good listening skill is a piece of fine art.

An equally important class of post-event data concerns student reflections on how action learning "came together" for them as the sets worked out interpersonal and task-attending problems simultaneously. One person reported that the most engaging part of the experience was the moment when, after "fits and starts," "palpable" frustrations,

volcanic eruptions and "an overriding tension that kept everyone highly tuned to the process," the group finally "began to problem-solve together." Another said that "It was very, very affirming to see how my set so quickly became a close and productive group." Many were surprised that trust levels developed rapidly, and they gave adherence to principles of action learning full credit for this swift transformation from strangers to people who cared about each other and about what they were doing. One reported having difficulty "letting go of closure," a thought perhaps related to a prevailing expectation of pre-determined, specified goals and behavioral measures of progress. But that same participant reveled in the experience of shared perceptions, "phenomenal" creativity, and the thrill it became to develop "an illustration of our insights" for the clients' benefit. "Inspiration" and "electricity" were other descriptors that surfaced in this reflection.

A report from another set suggested that the set made some "strategic errors" that led to a disappointing experience. The commentator did not blame the action learning process per se, but "our inept handling of it." Other comments revealing of how students experienced the process include the following:

> I see action learning as a way to re-humanize our corporations and provide personal development to our businesses...Just as we carry our past experiences in life into our current situations, so we carry our "real lives" into our corporate lives.
>
> I think the [action learning] process needs to start in elementary school.
>
> It was reality; I learned by actually doing. I also learned about myself and learning gaps that I possessed.
>
> The single most important moment for me occurred on the last day of the client presentations. There, our two weeks of work came alive. As each group made its presentation, I saw evidence that the action learning process had worked for different sets, with different personalities, with different problems, and with different client contacts.

Summary of salient observations. The large amounts of striking information generated by even a preliminary review of student documentation is encouraging. Because they are particular salient, the following observations also enable the formation of a set of tentative conclusions:

1. A number of participants came away expressing belief that action learning had changed their perspective about learning. Several immediately became involved in action leaning activities on their return home. They have not chosen to close the book on action learning.
2. There was frequent reference to transformation or deep personal change. Something is different for them now.
3. There were a number of comments about how much had been accomplished in such a short time. They felt like contributors and were proud of it.
4. Most felt a sense of engagement throughout the experience. They apparently did not feel that "tuning out" was a serious or viable option.
5. Students felt most distanced when full meetings of all participants had been scheduled. They tended to view such meetings as an interruption of set-related effort and preferred to be spending their time on the problem assigned, with the people whom they perceived to be most vital for their particular task accomplishment.
6. Students felt regular affirmation, discovering that they were not alone in finding the task to be difficult or--as they sometimes suspected --perhaps a "mission impossible."
7. The mentor role was viewed positively in most instances, especially when intervention by the mentor was minimal. In one instance, the action learning set decided to fully integrate the mentor into the set. For another set, absence of the mentor when needed was an irritant. In another case, a mentor was asked to leave the set area in order that the set could meet and work by itself.

There is only a tantalizing hint in these preliminary findings of what the original, guiding research questions sought to discover. But this state of affairs is common in qualitative research and is perceived to be temporary. In-depth analysis is still to come. Rethinking the questions themselves will be a distinct possibility if they are found not to have the appropriate focal length or power of resolution. Checking with a few participants about how the

group data is being coded and interpreted will also help either to confirm or redirect this investigation. But there is little reason to question the assumption that qualitative research can be helpful in the discovery of what actually takes place when people are engaged in action learning.

How This Research Contributes to New Knowledge in HRD

This research addresses one of several gaps in the literature on action learning. Among practitioners, while there are many true believers that action learning sets have unique contributions to make toward personal and organizational effectiveness, there is a sense that the existing research base is insufficient to give them confidence in their beliefs or to help them make the case for using action learning methods with potential clients. A current burgeoning of HRD interest in the action learning approach makes it increasingly incumbent upon theorists and practitioners to step up research activity and define the process and effects of action learning more fully, understandably, and reliably. Whether or not an organization is willing to take the risk of introducing action learning sets may depend in part on whether they can see the benefits that may be accruing in other organizations.

Study of the VCU-initiated Summer Overseas Program is significant because it seems to mark the first time that action learners have been asked to look continuously at the experience through two separate lens, the first individual and the other, organizational (group process). Data gathering methods and analytical strategies being called into service in this study may provide a framework that can be used or adapted by others to broaden the research base and provide new clues for studying not only individual changes, but also effects in organizations where action learning occurs.

A generic qualitative research model with the dimensions and mechanisms suggested here may have considerable value for future researchers. Critical incident research may gather impact and credibility when self-reports are deliberately filtered through dual or multiple lenses, followed by a research process of systematic textual analysis, interpretation, and data revisitation . It may presently be easy to dismiss statements that lives have been changed and new behaviors learned during action learning as either a halo effect or wishful thinking, but the development of a critical mass of data pointing to real and lasting effects would have a different influence. Potentially, such a research model can be used for comparing formal classroom or task force types of processes with the more informal and experientially based action learning processes. Certainly, more can be learned about what does and does not help those who undertake the risks of action learning.

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Professional Learning on the Job: A Qualitative Study for One Profession

Kitty H. E. Kwakman
University of Nijmegen

In this study learning on the job of teachers is addressed. The purpose of the study is to reveal perceptions of professionals themselves in order to gain insight into how professionals are learning on the job. It was assumed that learning originates from the interplay between individual and environmental variables. Therefore, antecedents of professional learning were also determined as well as organizational conditions perceived as influencing learning on the job.

Professionals generally need to keep up their skills after they have graduated in order to develop their competence and to improve the quality of the service provided to clients (Houle, 1980; Mintzberg, 1979). Continous learning of professionals can take place in a variety of ways although different authors describe these ways differently. Houle (1980), for instance, describes three different modes of learning: discovery, inquiry, and performance, whereas Marsick & Watkins (1990) and Watkins & Marsick (1992) stress that learning can take place formally, informally, and incidentally. Emphasizing the variety of ways in which professionals can learn means that non-traditional ways of learning come into the picture. Traditionally, professionals are expected to improve and update their skills in very specific ways: by reading journals and literature, participating in courses and attending conferences (Mintzberg, 1979; Noe & Wilk, 1993). These ways are very well suited to keep up with new developments and they reflect a specific view on professional development. In this view, new scientific developments arising outside the professional practice are the main source for improvement of professional practice. Therefore, it is assumed that professional development is largely based on learning by transmission of knowledge.

Recently, this model of professional development has been discussed, especially for teachers (Lieberman, 1995; Little, 1993). Transmission of knowledge is denied as most important for professional learning, as professional development refers to changes in knowledge, skills, attitudes, and behavior (Hoyle & John, 1995). Professionals need to change their behavior in order to implement new developments and to improve their practice (Osterman & Kottkamp, 1993). Changing behavior is conceived of as a very difficult and demanding learning process, that can take place only in practice. Moreover, professionals themselves are considered to be important in creating their own knowledge, which is called practical knowledge. In this new model of professional development, other ways of learning are stressed. Great emphasis is given to learning on the job and to a variety of activities which are hypothesized to stimulate reflection and interaction. However, little is known about the extent to which teachers are actually learning on the job and the ways in which they do this.

Theoretical Framework

Learning on the job is conceived of as depending on individual and environmental factors. On the one hand, the environment has to offer opportunities for learning, on the other hand, individuals have to make use of these opportunities.

The model of the learning potential of jobs is based on this interaction between individual and environmental factors. This model aims at different variables and dimensions that are conducive to learning (Frei, Duell & Baitsch, 1984; Onstenk, 1992, 1995). In this model learning and the development of competence is hypothesized to result from specific combinations of skills and qualifications of the worker, learning opportunities on site, and the ability and willingness of

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workers to learn and develop their competence. Learning opportunities at the job depend on job characteristics and features of the work environment.

The following characteristics are considered to be important: completeness, complexity, innovations, occurrence of events and problems, planning, discretion space, interaction with colleagues and supervisors, availability of feedback, information, computers, and material clues. Next to these learning opportunities the following features of the organi-zational policy and structure are considered to affect the learning potential of jobs: innovation policy, organizational structure, career and personnel policy, information structure, participation structure, and learning climate.

Although this model reveals relevant factors for learning, the model itself lacks empirical validation. Also, the different individual factors are very broadly defined. Theories concerning motivation of adults to learn, self-directed learning and professional development stress that the meaning attached to a specific learning situation of activity is crucial for learning to occur (Candy, 1991; Farr & Middlebrooks, 1990; Merriam & Caffarella, 1991). Stressing the learners' own frame of reference means taking into account interest, attitudes, beliefs, intentions, goals, needs and valences (Candy, 1989, 1991; Farr & Middlebrooks, 1990; Heckhausen & Kuhl, 1985; Wlodkowksy, 1985).

So, the most salient factors for professional learning remain unclear. As a first step in discovering these factors, this research was carried out to reveal factors that are relevant for learning in the perception of professionals themselves.

Research Questions

Three research questions were addressed:

1. In what ways do professionals perceive that they learn on the job?
2. Which personal factors influence their learning?
3. Which environmental conditions are perceived to be influencing learning?

Methodology

Participants. Sixteen secondary school teachers participated in this study. They had not been randomly selected from a larger group. Selection of respondents was made in consultation with the University Teacher Training Institute. Eight teachers were selected on the basis of their personal contact with the Training Institute while the other teachers had been contacted through informal ways. Teachers were selected from the categories of languages, natural sciences, and social sciences. From each category one discipline was arbitrarily chosen, which resulted in Dutch, mathematics, and history. The sample excluded teachers in their first five years of employment. In that period, they are mastering their profession which is assumed to influence their main concerns as well as their learning (Huberman, 1989). Although there are no theories that relate gender to learning on the job, in order to get variation in opinions at least one female teacher in each discipline was included. So, the sample consisted of seven teachers in history, five in mathematics, and four in Dutch language. Their years of experience in teaching ranged from 6 to 33 years, with only two teachers with less than 15 years of experience. With regard to gender, there were 5 women and 11 men involved. Most of the teachers were teaching in upper secondary classes.

Instruments. In-depth, open-ended interviews were conducted. To help teachers to start talking about their own learning, in each interview the following key questions were posed:

* Are there any recent events that have influenced your professional performance?
* How do you keep up with new developments?
* Do you encounter challenging situations in your job?
* Are you still learning from the job?
* Did your performance change during your career?
* Do you receive support for your professional development?
* What kind of support do you wish for your professional development?

Interviews were conducted in the Spring of 1995 and each one took one hour on the average. Each interview was tape-recorded and transcribed.

Analysis. A computer program for qualitative data analysis (Kwalitan 4.0) was used. This program is based on the premises of grounded theory, as developed by Glaser & Strauss in 1977 (Wietzman & Miles, 1995). The aim of grounded theory is to develop theory by starting from the empirical data. The data themselves serve as main source for exploring different themes and variables concerning the problem under investigation.

Analysis took place at different stages. Initially, the interview protocols were divided into segments, in such a way that each segment was related to a different theme. Next, codes were attached to these segments. Codes were created by reading the text of segments and by expressing the content of this segment in one or more words. Thus, codes were labels that reflected the theme that was present in a specific segment. If new data did not give rise to new codes, this stage was finished. In the second stage new data were coded. Next, selection of the most significant codes took place. Significant codes were codes that served as a possible answer to one of the research questions. Comparisons were made between identical codes and relationships between codes were looked for in order to distinguish common aspects that reflected an underlying variable. The aim was to search for dimensions underlying the data and for codes which could serve as an indicator for one of the variables. Finally, when codes were ordered by variables the level of analysis changed. Instead of comparing codes, comparisons were conducted between respondents. For each variable, a written summary was made per respondent which reflected the position of this respondent on that variable. On the basis of these summaries of each variable, the analysis was aimed at discerning similarities and dissimilarities between groups of respondents, per variable. Hence, these similarities and dissimilarities were used to formulate different categories of each variable.

Results

First Research Question. With regard to the first research question, the analysis revealed that learning on the job was related to very different kinds of activities. The following individually undertaken activities, all related to teaching in the classroom, were perceived to be leading to learning:

- reading books, professional journals, or newspapers;
- reading teaching manuals and methods ;
- preparing or creating instructional materials;
- constructing tests;
- experimenting with new teaching materials;
- working with new teaching methods;
- teaching different classes and grades;
- coping with different needs of pupils;
- motivating pupils;
- guiding pupils;
- asking for feedback;
- reflecting on one's performance;
- changing one's own teaching behavior.

Next to these activities a lot of activities were mentioned which are executed in the broader school context and in close contact with colleagues:

- exchanging teaching materials;
- exchanging ideas and experience;
- asking for help and providing help;
- attending colleagues' lessons;
- being supervised or coached;
- giving supervision;
- having meetings;
- joining committees;

- taking policy decisions;
- organizing extracurricular activities for pupils;
- developing or providing training for colleagues;
- talking with colleagues outside the school;
- visiting other schools.

All these activities could be classified into the following categories:

1. gathering information;
2. working with (new) method and materials;
3. improving one's performance;
4. teaching in itself;
5. exchanging teaching materials, ideas and experiences;
6. executing tasks at the school level related to school policy or to guidance of pupils.

Second Research Question. Concerning the second question about personal factors influencing learning, each learning activity reported was analyzed in order to reveal the incentive to learn. Incentives which related to personal factors were: interest, initiative, development during the career, need for variation, experiencing problems and lack of challenge. Further analysis revealed three variables which influenced the kinds of activities which will be undertaken. These variables were:

1. *Professionality*. This variable concerns different kinds of beliefs regarding practice. These beliefs are related to two aspects of professionality. First, beliefs have to do with opinions concerning the most important goal of teaching. Teachers tended to vary in this respect. Three teachers believed that teaching pupils how to learn and paying attention to pupils' learning processes is most important. Six teachers adhered to the belief that knowledge of subject matter is most important whereas seven teachers largely emphasized the social development of pupils.

Secondly, beliefs concern the range of tasks that belong to the job. Two teachers were exclusively oriented towards their daily activities in the classroom and they showed a restricted task orientation. Five teachers showed a bounded orientation: they were involved in many school-directed tasks but only with the intention to improve their classroom activities. All other teachers adhered to an extended orientation: they believed that next to teaching, school policy and involvement in collaboration are crucial parts of the job.

Beliefs concerning professionality seemed to be important for the kinds of activities teachers executed as well as for the importance attached to specific activities. For instance, all teachers reported that they gathered some information concerning new developments, but teachers with subject-oriented beliefs tended to do this more intensely. Also, teachers with restricted task orientations did not execute school tasks whereas only teachers with extended orientations executed tasks related to school policy.

2. *Pro-activity*. This variable concerns the extent to which activities are actively looked for. Although all activities required individual action, persons showed to be more or less purposeful in executing these activities. If a person purposefully executed one of the activities, the activity was voluntarily undertaken and out of one's own initiative. However, a person can never be pro-active in all activities, and therefore pro-activity is always related to specific kinds of activities, expressing one's preferences.

All teachers differed largely in their initiative for executing activities. The initiative was mainly directed towards working or experimenting with method and materials, teaching and towards executing school tasks. Only a few teachers took the initiative to keep up with new developments through gathering information, to exchange in interaction with colleagues, or to improve their performance. However, this did not imply that these activities were not undertaken, but only that in these activities the environment played a crucial role.

3. *Amount of challenge*. This variable refers to the extent to which teaching and other tasks at the school level are experienced as challenging. For learning a certain amount of challenge seemed necessary. Teachers regarded variation as the main source of challenge. Some teachers considered teaching itself as challenging because teaching implied non-routine situations which they valued positively. Nevertheless, other teachers expressed that variation derived from other sources. A change in teaching method or materials could cause a regular turn

of events but variation was also due to executing other tasks, teaching another grade, having new pupils, or having a new colleague.

Nine teachers experienced teaching as challenging. Five of these teachers also expressed to find some challenge in executing school tasks. Hence, there were also seven teachers who did not experience teaching as a challenging activity. However, five of these seven teachers seemed to find some amount of challenge in executing school tasks. There were two teachers who experienced no challenge at all. So, teachers showed different patterns concerning this variable. This pattern strongly influenced the perception of learning activities. Teachers who regarded teaching as challenging reported more often that they were learning from teaching activities in itself and from working with method and materials. On the contrary, teachers who experienced school tasks as challenging were more inclined to report these as learning activities.

Third Research Question. This question about environmental conditions perceived to influence learning was answered first by analyzing the (environmental) incentive to each learning activity. Secondly, respondents were asked for their opinions and experiences regarding stimulating and restricting conditions. These were all ordered and classified under a smaller number of variables. This procedure resulted in the following variables:

1. *Collaborative culture.* This variable refers to a culture in which teachers jointly plan and coordinate subject matter, as well as the extent to which they share experiences, have discussions with one another, and provide help and support. Teachers expressed a great need for this sharing of ideas and experiences, therefore, for specific kinds of interaction. Thirteen teachers reported this as an important condition for learning, but nine of them felt that this condition was insufficiently available in their organization. Although all teachers have to collaborate in some way and have to attend meetings, they complained about the lack of interaction and discussion about what happened in the classroom and about ideas and beliefs concerning education and teaching. Thus, teachers missed support and enthusiasm from colleagues and felt hampered in implementing new developments and in improving their practice.

Even if collaboration was mandated by scheduling meetings, these kinds of problems remained or even got worse. Collaboration which was compulsory was often experienced as ineffective and time consuming and even created conflicts that continued. For collaboration to be fruitful to learning, it seemed especially important that teachers shared beliefs, interests, and values about teaching as well as about collaboration.

2. *Support from management.* Teachers reported that they would like to be treated as individuals with their own interests and abilities. They considered individualized reward and encouragement as stimulating to their learning. However, the exchange between teachers and management was severely impeded by lack of communication. So, teachers felt denied because they could not discuss their daily problems and this was considered to be restricting to their learning.

3. *New developments.* Developments within the discipline, but also developments in curriculum or method, appeared to have strong effects on learning because of their consequences for teaching. A lot of new developments were mandated by the government and had to be put into practice. But these new developments also stimulated discussion and interaction with colleagues.

4. *Innovation policy.* In some schools the policy concerning new developments aimed at involvement of teachers themselves. Teachers were working together in committees to prepare and discuss innovations. This was experienced as very stimulating as teachers felt more committed to new developments and supported in changing their practice.

5. *Task differentiation.* The majority of teachers considered executing other tasks at the school level as very stimulating because these tasks gave rise to new experiences which were conducive to learning. School tasks could be pupil or policy-oriented and they were both valued differently. Pupil-oriented tasks were especially valued because of the possibilities for more contact with pupils, whereas policy-oriented tasks were valued because of the greater organizational commitment. Because of these positive experiences with school tasks, teachers were convinced that every teacher should execute such tasks. A policy concerning the division of tasks among the employees of the school was conceived of as stimulating, but only if teachers were not forced to execute tasks for which they were not motivated.

Conclusions

This study suggests that there are different ways in which teachers learn on the job. Considering all kinds of activities, teachers not only differ to the extent in which they learn but also in the way they learn. Moreover, several individual and environmental variables seem to influence learning. For instance, sharing ideas with colleagues depends on the opportunities to meet colleagues but also on the willingness of teachers to share these ideas and experiences.

Concerning individual variables, the results aim at the significance of the learners' frame of reference. Teachers' preferences, beliefs and experiences play a very important role: they determine the choices teachers make, more or less purposefully, to execute certain activities and thus the way they learn. Furthermore, these individual variables seem to determine which specific activities are perceived to be leading to learning. Although individual factors play this important role, learning is also dependent on the school environment. As this research shows, the school organization has different opportunities to stimulate or impede learning.

In comparing these organizational variables with the model of the learning potential one may conclude first that conditions mentioned also refer to cultural characteristics. Social support by colleagues and management seems extremely important in this respect. In the model of the learning potential only the opportunities for contact and interaction are stressed. This study shows that opportunities are not enough to experience support, because support also has to do with the kind of interaction that takes place and the emotional response to it. Secondly, the model of the learning potential proposes that learning can be enhanced if learning opportunities are created. This research showed, however, that it is not sufficient to only create structural opportunities. As learning is also dependent on individual characteristics, learning opportunities have to fit these individual characteristics. As teachers with different orientations seemed to use the same opportunities differently, these results referred to a complex interplay between individual and environmental variables. The study shows, for instance, that only some teachers will indeed learn from executing school tasks so that requirng all teachers to execute such tasks probably will not enhance their learning.

This research also reveals that new developments play an important role as an impetus for learning on the job and so for improving professional practice. Next to keeping up with new developments, teachers have to learn how to cope with these developments in their daily practice. Although teachers consider implementing these developments as very important, transmission of new knowledge seemed prerequisite for this. So, in practice, old and new models of professional development walk alongside one another.

In interpreting these results one must keep some limitations of this study in mind. Teachers are asked about situations, activities, or experiences in which they learned. Although teachers were able to talk about this, they had severe difficulties in talking about the effects of their learning. Since this was not the object of the study they were not asked to elaborate on this. However, one might argue that learning was considered in a very broad way in this study. And also that it is much easier to talk about learning than to execute learning activities. So, this study only revealed perceptions of teachers: perceptions of learning as well as perceptions of influencing conditions. The consequences of this are that individual factors may be overlooked. For individuals, it is more easy to talk about environmental conditions which influence learning than to recognize what individual factors (*e.g.*, motivation, uncertainty orientation, or efficacy) are influential. Another consequence is that this study showed only perceptions of conditions whereas the availability of conditions within the school organization was not addressed. It remains unclear whether these conditions are really not existing, or not recognized by individual teachers.

Nevertheless, this study raises some themes and hypotheses for further research. First, the relationship between individual variables and learning needs more attention as well as the way different individual variables are mutually related. Next, more research is needed to investigate whether beliefs and learning activities change during the career. Do professionals have different beliefs concerning their professionality in different stages of their career? And do they perform different learning activities? Secondly, the role of the individual versus the role of the environment in learning seems a significant topic for research. For instance, one could argue that the amount of challenge is as much an environmental variable as an individual one. In this

research, it was conceived of as an individual variable because teachers were able to create challenge themselves and they all experienced challenge to spring from different sources. Nevertheless, the environment has to offer these sources or the opportunities and support to create these challenge. Thirdly, the interplay between individual and environmental variables needs more attention. It would be advisable to research if individuals with different perceptions, preferences, and experiences value environmental conditions otherwise.

Finally, this study raises some discussion for professionals in general. Three issues will be discussed. First, learning on the job appeared to arise from solely undertaken activities as well as from activities which arise out of contact with clients or colleagues. The availabity of colleagues seems very important to learning as colleagues stimulate reflection and provide help and support. As much contact with colleagues takes place on an informal basis occurring in the course of daily activities, it may be important to provide and stimulate such opportunities for contact and interaction, either within the organizational context or in formal training or development programs. Moreover, providing opportunities is not sufficient for professionals themselves also need to be convinced of the utility of sharing and interaction. For many professionals, this will imply a change of professional attitudes as professionals are often educated and socialized to work independently and to be autonomous and individually responsible for their practice as well as for improvement of their practice.

Secondly, the question if all professionals need to learn on the job in order to improve the service they provide to clients depends on the view of the nature of professional knowledge. If professional work is conceived as grounded in highly rationalized knowledge bases, much emphasis is given to learning through transmission of information and new scientifically developed knowledge. On the contrary, if the emphasis is on knowledge about personal professional practice, learning is viewed as reflective practice and thus also takes place on the job to a certain extent. The aim is the development of skills that enables professionals to create knowledge needed to respond to diverse demands of practice. Therefore, theory is used as an important resource but "attention to practice is the means toward the development and refinement of theory" (Osterman & Kottkamp, 1993, p. 37).

The third issue is related to the previous one. As professionals are considered to improve continously the quality of their service, the difficulty is who determines what is best quality. Professionals, clients but also the society may have different ideas and opinions in this respect. According to professionalization processes, professions differ to the extent in which they are able to influence and shape quality-of-practice issues. Nevertheless, what constitutes best quality or best service will continuously be changing because of different beliefs and societal developments. So, professionals themselves will also have different opinions of what best service is and how it may be provided. As this research shows, professionals perform their jobs in a way that fit their beliefs and preferences. Therefore, improving service will always have to start somehow with clarifying these individual beliefs and preferences, so with practice.

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Using the Burke-Litwin Model as a Lens for Understanding the Implications of Action Reflection Learning™ as a Catalyst for Organizational Change

ARL™ Inquiry[1]

In this paper data on an Action Reflection Learning™ program are analyzed using the Burke-Litwin model for organizational change and performance. Preliminary findings suggest that the change process in this company followed the general pattern predicted by the model and that Action Reflection Learning™ functioned as a catalyst for the change process, providing a liberating structure . The categories of vision, human agency, learning, and informal organization are important to the story and not explicitly referenced in the model.

This paper uses the Burke-Litwin (1992) model for organizational change and performance as a conceptual framework for analyzing field data gathered in an in-depth case study of an Action Reflection Learning™ (ARL™)[2] program in one corporation. ARL is an executive development strategy that is often used to support organizational change in addition to individual development. At the heart of its design is an iterative process of action - through project work on actual problems - and reflection - separate, specifically designed opportunities to think about what took place (O'Neil & Marsick, 1994).

We have chosen the Burke-Litwin model as an analytical framework because it is a comprehensive model, derived from the literature on both research and practice on organizational change. The Burke-Litwin model distinguishes between transformational and transactional variables that affect individual and organization performance. Their model provides a useful analytical lens for our data because we are interested in whether or not ARL can be used to catalyze long-term transformational change.

The following research questions are addressed and discussed:

1) Using the Burke-Litwin model, what lessons can be derived from the research about ARL as a strategy for catalyzing and supporting desired changes, and for identifying transformational levers of change?

2) What critical ingredients in the ARL program, and the way in which they interacted with other initiatives or conditions in the company, contributed to catalyzing or inhibiting desired changes?

3) In what ways did leadership and management practices interact with one another, and with other transformational or transactional variables, to catalyze and support desired changes?

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[1]ARL Inquiry is a research group affiliated with Leadership International Management Ltd. In alphabetical order the members of ARL Inquiry are Robert Kolodny, Adjunct, New School for Social Research; Sharon Lamm, Doctoral Candidate, Teachers College, Columbia University; Victoria Marsick, Teachers College, Columbia University; Glenn Nilson, Eastern Connecticut State University, Judy O'Neil, Adjunct, Teachers College, Columbia University; Lyle Yorks, Eastern Connecticut State University. This article is based on data gathered by Lyle Yorks and analyzed jointly by the Inquiry. Lyle Yorks, Victoria Marsick, and Sharon Lamm took the lead in writing the paper.

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The ARL Program Being Studied and Our Research Methodology

The site for this study was a multi-national food products company striving to transform itself into a global organization. The company initiated ARL as a means for developing a global perspective and a global network of relationships among more senior operations managers around the world. The ARL intervention consisted of three programs which were held over a period of two years. Each program consisted of four week-long sessions held over a six month period in different worldwide locations of the company. The intervention was part of a sequence of initiatives directed toward supporting the vision of a global organization. The other initiatives, and their importance for the change process, will be discussed further below.

The data reported here were gathered through a participant observation design, supplemented by extensive interviews. A field researcher traveled with two of the three ARL programs and had access to all the activities that took place. Additionally, seventy-one formal interviews were conducted. A more extensive discussion of the methodology used in this study is available in Yorks, O'Neil, Marsick, Nilson, & Kolodny (1996).

Using the Burke-Litwin Model as a Conceptual Framework for Analyzing Our Data

As mentioned above, the Burke-Litwin (1992) model provides a comprehensive framework integrating the empirical research literature and practical experience. Burke-Litwin developed this model as a guide for both organizational diagnosis and planned organizational change It "portrays the primary variables that need to be considered in any attempt to predict and explain the total behavior output of an organization, the most important interactions between these variables, and how they affect change" (p. 529). Following open systems principles, Burke-Litwin define the external environment as the input, individual and organizational performance as the output, and a feedback loop that goes in both directions between the input and output. Throughput consists of ten organizational factors/variables. They distinguish these factors as either transformational or transactional stating that "By transformational we mean areas in which alteration is caused by interaction with environmental forces...and will require entirely new behavior sets from organizational members...By transactional we mean that the primary way of alteration is via relatively short-term reciprocity among people and groups" (pp. 529-530). Mission and strategy, leadership, and organizational culture are the three transformational factors. Management practices, structure, systems, work unit climate, task and individual skills, motivation, and individual needs and values comprise the transactional factors. The reader is referred to the Burke-Litwin (1992) article for more a more complete depiction of the model.

Before turning to our analysis a few preliminary observations on the Burke-Litwin model are appropriate. The components of their model have evolved out of practice, specifically their field experiences over a five year period as consultants to British Airways. Their intention in putting forth the model is to provide "empirical justification of what we clearly believe works" (p. 524). The Burke-Litwin model depicts hypothesized relationships among constructs supported by a number of empirical studies in which sets of these constructs were operationalized as variables. They define their constructs in ways that depict categories useful for qualitative coding. We compare their categories to our particular case.

The structural presentation of the model with its emphasis on highly analytical cause and effect language masks the nature of action within organizations. The form of the model which "specifies by arrows which organizational variable... influences more directly which other organizational variables" (p.527) leads one toward a view of the world in which variables are acting on variables in a way that potentially reifies the model [see Abbott (1992) for an elaboration of this point]. Burke-Litwin are clearly cognizant of the potential problems this poses. "...we are quite aware of the fact that models may only help us to understand reality; they do not necessarily depict it. With respect to our three transformational boxes, they can be thought of more realistically as being in the minds of organization leaders and as part of their behavior, not

in organization categories" (p. 536). This point is significant because it gives emphasis to the factor of human agency in the discussion. "The primary way of [transactional] alteration is via relatively short-term reciprocity among people and groups. In other words, 'you do this for me and I'll do that for you" (p. 530). Here we get the image of real people having to think, act, and reflect in a world with complex properties. Still, in the graphic depiction of the model and the discussion of it, variables not people do the acting (Abbott, 1992).

We would expect that the narratives of specific interventions would always vary somewhat from a conceptual model. Further, the categories of any model of organizational change processes best remain "polymorphic, supple, and adaptable, rather than defined, calibrated, and used rigidly" (Wacquant, 1992). However, a number of narrative cases comparing events through the lens of the Burke-Litwin model might produce narrative generalizations across cases, shedding light on the role played by human agency.

Triggers and Outputs: The External Environment and Organizational Performance

The CEO of the company in question envisioned transforming what was a multi-national divisional organization into a global organization. Three aspects of the company's external environment were influential on the CEO's thinking: 1) many of the company's large industrial customers were global and expressing preference for dealing with global suppliers; 2) globalizing would allow the company to more effectively leverage its various products, positioning it in the marketplace in a way its competitors could not; and 3) the corporate parent, a huge conglomerate, had made a decision to divest itself of operating companies that were not core to its' primary business. Creating a fully integrated global company would increase attractiveness to buyers interested in entering the company's markets on a global basis and make it less likely that new owners would be able to sell off parts of the company as assets.

However, it would not be easy to realize the CEO's vision. There were strong "walls" separating the various operating units; walls rooted in different organizational histories as well as national cultures. The impending sale reinforced these walls, as management in the operating companies could not be sure the company would remain whole after the sale. The various parts could become competitors, or in some instances customers. The CEO believed that globalization was key to the long term viability of the company. The mission of the company was to become the world's largest and most profitable provider of their products and to have fun. The CEO knew the changes necessary to make the transformation could not be forced on the organization. The organization needed to accept the need for globalizing and learn its way through the issues involved in functioning effectively on a global basis.

At this writing the company appears to be well on its way to realizing this vision. A new global network structure has been put in place with members of the executive team heading up world-wide functions of operations, marketing and sales, finance, and development. A one company profit and loss statement is now being used in the company and there are numerous examples of cooperation across the global network. The company has just been sold as part of the parent's strategy of returning to a set of core businesses clustered around chemicals. Presentations to potential buyers were organized around the transformation to a global organization. The successful bidder is a large food products company for whom our subject organization represents a complimentary business. Initial signs indicate that not only will the projected business strategy go forward with little interference, but that the organizational transformation significantly contributed to an effective acquisition process that has been a win-win for both parties.

Currently the company is profitable and making a higher return than in the past several years. Management changes in one of the regions triggered by the changes in the organization have revealed long standing operational problems that have led to poor quality and customer service. These problems are being addressed through the appointment of a key manager from another part of the world. Only time will reveal the outcome but, the approach taken reflects the new globalized organization.

Using the Burke-Litwin Model, What Lessons can be Derived from the Research about ARL as a Strategy for Catalyzing and Supporting Desired Changes?

The narrative story of the change effort at this company can be summarized as follows -- changes in the external environment were influential in the shaping of the CEO's vision. The CEO pushed for a change in the mission and strategy. Both this vision and the strategy received organizational support through a four-and-one-half day search conference held in 1991 involving the top fifty managers in the company. During the conference small functionally mixed groups identified priorities and directions for globalization. One outcome of the conference was a marketing/communication task force that began organizing joint presentations from the operating divisions at trade shows. However, other task forces established at the conference lost momentum and little else happened.

An organizational culture survey documented the fact that enacting this vision and strategy required a significant change in the organization's culture. This survey surfaced three wide spread beliefs: 1) managers throughout the company did not believe that senior executives, with the exception of the CEO, really wanted globalization; 2) cooperation with other operating units would be penalized; and 3) significant development of competencies necessary to function in a global organization was needed. These competencies were teamwork, employee development, trust, leadership, communication, conflict management, and innovation and change.

The vice president for human resources and organization development believed that if transformational change was to occur in the organization "an intervention that impacted on the organization's culture and got people to change how they perceived their roles in the organization was necessary." Both he and the CEO agreed that an ARL strategy was the best hope for accomplishing this. Confronted with the results of the organizational culture assessment, and advocacy from the CEO and a consultant on globalization who worked with both the company and parent corporation, the members of the executive committee approved the ARL intervention.

The subsequent ARL intervention focused on those leadership and management practices that had emerged from the cultural survey. Simultaneously, issues of structure and systems were addressed in projects sponsored by members of the executive committee and worked by the ARL teams. Essentially, ARL was a vehicle for targeting changes in leadership and management practices and for opening up thinking about the potential for changes in structures and systems.

The categories of the Burke-Litwin model prove useful as a starting point for analyzing the story of this organization's transformation. The early stages of the change effort preceding ARL is a story of the CEO struggling with how to translate his vision of global organization into action. For two years before the beginning of the ARL effort, interventions were designed to build understanding and commitment to the globalization strategy (the search conference) and to assess the organizational culture. The assessment documented the need for transforming both how managers in the organization perceived their roles and for developing competencies necessary for playing different roles in the organization. During this time the vice president of human resources resisted pressure from his peers to implement a traditional human resource initiative (ie. a new performance appraisal system or compensation package--changes that would have operated at the transactional level of the model). During this time the human resources vice president also observed that team building efforts directed toward supervisory practices (also conceptualized by the model as transactional) "weren't working."

What is also very germane to the story, but not readily apparent in the Burke-Litwin model, are the subtle influences of human agency. Space does not permit a detailed discussion of the interactions between players that are critical to the story. The CEO and vice president for human resources played roles marked by opportunistic advocacy (Yorks & Whitsett, 1989). They built alliances in the organization for the idea of globalization among managers through carefully selected interventions to achieve this purpose, and continually interpreted events in a way that moved the process forward.

As we have seen, the activities targeted by this human agency fit the transformational and more influential transactional categories of the Burke-Litwin model. One exception is the idea of vision, which is extensively discussed in the leadership literature (Bennis & Nanus, 1985;

Zaleznick, 1989), yet finds no explicit mention in the Burke-Litwin model, (either as a separate category or as part of Mission/Strategy or Leadership). Yet, the CEO's vision was clearly an important factor in providing an orientation toward a global organization, frequently articulated in a highly energic way. Vision can be considered part of the leadership category, but so can mission and strategy. If, as Burke and Litwin suggest, the transformational factors can be more realistically thought of as being in the minds of organizational leaders than as organizational categories, at least in this case vision was as an important part of the story as mission, strategy, and culture and merits explicit mention.

What Critical Ingredients in the ARL Program Interacted with Other Initiatives in the Company to Contribute to Catalyzing or Inhibiting Desired Changes?

ARL functioned as a catalyst, creating something akin to a liberating structure (Fisher & Torbert, 1995; Torbert, 1991) within the organization stimulating interactions among several of the categories specified in the Burke-Litwin model. A catalyst is an agent that triggers and accelerates a reaction among elements critical to transformation. Fisher and Torbert define a liberating structure as "a type of organizing that is productive and at the same time educates its members toward self-correcting awareness" (p.7). This describes the kind of learning structure that was created in the ARL program with a focus on projects (with real payoffs for a globalizing company) and the extensive use of learning methods such as reflection and dialogue while working on projects. The effect we suggest was catalytic for change in the company.

The ARL program was not implemented as another series of programs, which in many companies come to be regarded as the "flavor of the month." Rather, there was a strategically compelling reason for doing it--ARL was linked to an ongoing campaign focusing on the globalization of the company.

The explicit theme of the ARL intervention was "Working The Global Network" accompanied by a logo that visually made the point. Participants were drawn from around the world, with project teams representing a diverse cultural mix. Locations for each week of the ARL program were in a different part of the world, with visits to local company sites. Hence, at all levels of design the program symbolically embodied the emergent vision and strategy of the organization.

The structure of the program provided participants with an opportunity to contribute to the specifics of the strategy, and the structure and systems necessary for implementing the strategy. An example of projects and subsequent recommendations serve to illustrate this point. One project was defined as "What radical changes can be made within [the company's] financial and administrative areas that will significantly reduce costs while providing acceptable levels of internal control and improving service to internal and external customers to the highest level?" In this team's final report they noted the need for change is rooted in the "changing environment." "[the parent] will no longer be a customer in the foreseeable future, and [we] must become more customer and market driven due to increased global competition." The project team understood an important question underlying the project as "How can [the finance function] become a strategic weapon by being a source of strength not possessed by our competitors?"

The recommendations that emerged from this team included changes in how the function was organized on a global basis and the kinds of systems necessary to make it work. In examining the work of this project team one sees 1) their understanding of the changing external environment, 2) the acceptance of the theme of globalization that is embedded in the program and linked to previous initiatives, 3) the necessity of thinking strategically about globalization, and 4) recommendations impacting both structure and systems.

Each week of the ARL program had a theme which reflected the leadership and managerial competencies identified by the cultural assessment. These themes were "The Global Perspective," "Communications and People," "Teamwork, Trust and Conflict Management," and "Leadership, Innovation, and Change." Learning activities were built into each week of the program reinforcing these competencies. Additionally, the methods of ARL, including reflection

and dialogue, and stop/reflect, provided a means for having participants consider their learning around these areas based on how they were functioning as project teams.

For example, consider part of the stop/reflect dialogue in one team during the first week of the program:

> First Speaker (addressing the person who had run the meeting): Your process was good in getting us started, we got some direction, but don't make it a pattern.
> Second Speaker: Use brainstorming to give us equal time.
> Third Speaker: I agree for brainstorming
> Fourth speaker: we must make choices in how we work.

In another group a contest over leadership emerged between two of the most senior people during the first few days of work. One of the contestants for leadership said to the other "I am uncomfortable...you are leading, but not marshalling us in a direction" to which another, considerably more junior member of the group said "I think he's doing what you want to do." During an earlier stop/reflect this last speaker stated: "In terms of process I gave us a 2. I think we did a lousy job. No ARL techniques were used, not once. My ego got involved."

The ARL program was often initially experienced by participants as unstructured and mysterious. Participants were taken out of their comfort zone, placed in a setting in which they had to establish the norms, deal with questions that were outside of the cultural experience of the organization, and reflect on what was happening. The catalytic effect of ARL was akin to the unfreezing that Lewin (1946) writes about as necessary for the change process. In addition to facilitating interaction between the categories of the change model it raised the consciousness of participants and others in the organization of the inconsistencies between what is being promulgated and what is being practiced in the organization.

This highlights another factor, central to what ARL contributed to the transformation at this company, but not explicitly mentioned in the Burke-Litwin model, learning. Learning becomes central to the effective changes in schema of people as they encounter the issues embedded in the transformational (and transactional) categories of the model. The learning that took place in this ARL program was not only among the participants in the program, but among the participants and the members of the executive committee, who, in their role as project sponsors had to interact with the participants within the framework of the program.

One such learning event took place in the interaction between members of the first ARL program and the executive committee at the final presentations of the projects. As the presentations proceeded the members of executive committee began interpreting, challenging, and arguing among themselves. One participant recalls the event as follows. "I'm sitting around that circle when this event happened and it was ..such inappropriate behavior, and then I thought, boy, I guess my consciousness has been changed, because I wouldn't have noticed this six months ago." The group confronted the executives, stating "that's not how we do things in here." They also raised the issue of whether the executive committee was prepared to truly function as a global team. Instead of reinstating their power the executive committee members seem embarrassed, later confronting the consultants suggesting that they should have coached them more. More importantly, the event triggered a reflection on their own interaction and became part of the cultural story about the ARL program, remembered by the participants in that particular program and, more importantly, part of the lore of the executive committee.

Ultimately, culture change is reflective of collective learning. This is implied in the aforementioned statement by Burke and Litwin that the three transformational boxes in the model "can be thought of more realistically as being in the minds of organizational leaders and as part of their behavior, not in organizational categories" (p. 536). The executive who envisions him or herself as standing apart from the model, manipulating a system of variables without being changed in the process, will be disappointed.

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In What Ways Did Leadership and Management Practices Interact With One Another, and With Other Transformational or Transactional Variables, to Catalyze and Support Desired Changes

Our data are limited to specific points in time. We cannot predict the long-term impact on the transformation of the organization's culture. Our data are mixed on this point. Nevertheless, our case study findings suggest that over time the reframing of leadership roles through ARL can influence changes in management practices, which then support changes in the climate of the organization, and over time, its culture (ARL Inquiry, 1996; Nilson, 1996). These changes begin to influence changes in other variables as projects are used to promote new ways of thinking, organizing, and operating for globalization. In this case the most significant changes were in the reframing of leadership roles toward global thinking, participation, and reflection. Management practices changed accordingly, although by no means universally.

Reflective of this reframing is one manager's comment: "It benefits the company...who cares who gets what and where." In a comment reflective of the changed culture, this same manager observes, "I see a lot more of it's not us and them over there [Europe].

The impact on the culture has been more openness, and a willingness to act in an empowered way. In the words of one person, echoed by others, "more people are more open...not open in the personal sense, but open as far as being able to express their opinion..."

The increased reflectiveness of the culture is not viewed by everyone as a positive. One participant noted that in "the culture of company...things get analyzed to death...Decisions get postponed...[ARL] has given us a good mechanism to build consensus and to discuss things but is it making...decisions any quicker?

When our data are considered in their entirety the strongest changes are in the global mindset of managers and in management practices and shift in climate. There is, however, a lot confusion in these last two areas, with some participants changing their practices and others not, and some regression from the practices. The net effect does seem to be real movement in the culture as a result of the ARL program.

However, it also appears that the ARL program was a critical, but insufficient part of the transformation process. As mentioned above, the third ARL program was followed by the implementation of a new global structure. This new structure formalized new leadership roles at the top of the organization. Additionally, the global profit and loss system was implemented, along with changes in other business systems. Currently a new personal development system (linked to the recommendations of one of the ARL project teams) and a new appraisal system that will standardize the performance management process on a global scale, are being implemented. These subsequent changes in transactional factors are the follow-through to put in place the strategy, leadership, and culture changes worked on prior to and during the ARL program. ARL has been a process enabling the transition between the changes in transformational factors and transactional factors that translate the more abstract characteristics of the former into the operational characteristics of the latter.

This transition was made easier by a final factor impacted by the ARL program and not explicitly cited in the Burke-Litwin model--the informal organization. The data suggests that one of the important outcomes of the ARL experience has been the establishment of close personal relationships among the top managers in the organization. This network of relationships has produced advantages for the organization in terms of realizing savings through moving product and equipment across regional lines. It has also, combined with the redefinition of the leadership role, created an infrastructure for the changing formal organizational structure and organizational culture.

Summary

The narrative story of our case seems to fit the general structure of the Burke-Litwin model, and the model provides a powerful lens for understanding the organizational change process and how ARL functioned as a catalyst for change in this organization. However, there are important

aspects of the organizational change process that are not explicitly captured in the model. These categories are vision, human agency, learning, and informal organization. These categories are important to the present story and we suspect other change events as well.

The metaphors of catalyst and liberating structure seem very useful for thinking about the role ARL can play as part of a transformational organizational change strategy. However, to play this role it is important that ARL be linked to an ongoing process of change involving other interventions that address the transformational factors and be followed by subsequent initiatives that target transactional factors. Key elements in ARL functioning as a liberating structure are 1) projects linked to the newly emergent vision, mission, and strategy, 2) changes in leadership roles, and 3) learning around an informed view of the organizational culture and those management practices that need to be changed. The other key element in ARL functioning as a liberating structure is the emphasis on learning from the process--both learning about oneself and the organization. A key question for future research is how ARL might function in a context in which management was simply looking for changes of a transactional nature.

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